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UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

COLORADO

NATIONAL FOREST

INSECT CONTROL

1927

FALL PROJECT

1/20/28
KREUTZER

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Insect Control, Colorado
Fall Project, 1927

REPORT

ON THE

INSECT CONTROL PROJECT

FALL WORK 1927

COLORADO NATIONAL FOREST

Respectfully submitted, Jan. 20, 1928

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Forest Examiner

Approved 1-20-28

WM. R. KREUTZER

Forest Supervisor

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Insect Control
Colorado

REPORT ON

THE 1927 FALL INSECT CONTROL PROJECT

with

SUMMARY OF YEAR'S WORK

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Reference is made to the Project Report submitted July 11, 1927.

Introduction

The spring insect control project was compelled to close with a number of infested areas not covered by control work. With this condition existing further control work was considered necessary. After an extensive field examination with Dr. F. C. Craighead, Mr. J. M. Miller and Dr. M. W. Blackman, all of the Bureau of Entomology, it was decided to try fall control work on a small scale.

The sum of $5000 was allotted the Colorado for this and actual work in the field commenced on September 22, and lasted until December 16.

The purpose of this control work was to stamp out the beetle, Dendroctorus ponderosae, working in the western yellow pine timber on the Colorado National Forest.

General Plan

The general scheme followed in the spring control work was again used. The organization was considerably smaller for various reasons, but was handled on the same organization plan, shown graphically as follows:

Forest Examiner in Charge

Spotter	Spotter	Spotter	Spotter
1 Foreman	1 Foreman		
2 Laborers	2 Laborers	4 Laborers	2 Laborers (Pack outfit)

Spotting

The spotters were in direct charge of the treating crews covering the area they were assigned. The two foremen were experienced men who were more valuable than the laborers, and were paid 25 cents more per day. These two men are now qualified by training to take the spotters' responsibility if needed next spring. At present, I have five local men trained who are capable to handle the spotters' work.

Besides the three temporary men doing the spotting, Ranger L. C. Henry was assigned to this work. I believe there is a great opportunity on a project of this kind to give valuable training and experience to men in the Service.

Last spring the spotters were placed in charge of two or three crews of three men each, but in the fall work they were assigned only one or two crews of two to three men each. This was necessary on account of the difficulty in spotting infested groups of trees and the scattered nature of the infested trees. Spotting was doubly difficult as the infested trees had not changed from the healthy green color, and the usually numerous white pitch tubes on the infested trees were lacking . Some condition caused the trees to put up a very weak fight against the beetles. In most cases the pitch tubes we found were small and consisted mostly of reddish sawdust with only enough pitch to make a tube one-quarter to one-half inch thick. Many trees were found infested which had no pitch tubes; the only indication of attack being a small amount of fine reddish sawdust clinging to the bark and around the base of the trees.

The scarcity of pitch tubes is said to be a sign that the trees failed to put up a strong resistance. I further believe that the nature of the 1927 attack had something to do with it. The flight and new attack took place almost entirely during August 25, 26, and possibly continued thru the 27th, with a few stragglers in flight for another week. The weather was cold and rainy most of July and the forepart of August, and Dr. Blackmer predicted, before he left here about the middle of August, that a concentrated attack could be expected when the beetles finally emerged. Only an occasional pitch tube was noticed prior to August 25.

Control Work

Five control crews of two and three men were in charge of the four spotters. These crews were located this fall as follows:

Jug Gulch (See map)
Pack outfit, Elmer Benson, spotter.
One crew of two men. Three pack horses and camp outfit.
Men furnished their own subsistence.
The spotter was paid $5 per day and allowed $1 per day for each horse when used.

Grain was needed and was furnished from insect funds.
The laborers received $4 per day.

Big Thompson River (See map).

Glen Haven Area (See map).

Buckhorn Creek. (See map).
Camp outfit. Harry Campbell-spotter.
One crew of three men.
This outfit was furnished subsistence.
The spotter was paid $4 and the laborers $3 per day.
One of these was a designated foreman and received $3.25 per day.
The Big Thompson and Glen Haven areas were cleaned out by this crew and part of the Buckhorn Creek from Sherwood Hill to Twin Cabin Gulch.

Allens Park Area. (See map).

Jamestown Area. (See map).
Cabin outfit. Ranger Henry - spotter
Two laborers and one foreman
The laborers boarded themselves and received $4 per day.
The foreman received $3.25 per day and board.
This outfit cleaned out the Allens Park area and practically completed the Jamestown area.

Big Elk Park. (See map).
Camp outfit. E. A. Lahti - spotter.
Two crews of two men each.
Spotter paid $4.50 and laborers $4 per day.
They furnished their own subsistence.
Cleaned out upper end of Big Elk Park.

Big Elk Park is our heaviest infested region and it will take considerable work to control the beetle in this region next spring.

Approximately 45,000 acres were covered. This gives an average of 38 trees per section.

Labor

In order to get good men this fall it was necessary to pay $3 per day and board, or $4 per day without board. I tried to get men at 50 cents less per day to start with, but was unsuccessful as the local sugar factories were in the market for labor at 40 to 43 cents per hour. As it was I had no trouble to get good woodsmen at the $3 and $4 rate.

Equipment

Very little new equipment was purchased this fall. There were sufficient tools on hand so the only purchases were for files, axe handles and other small supplies. Sharpening and reconditioning tools were other items charged to this caption.

SUMMARY OF WORK

Fall Project

Man Days	No. Trees Treated: Cut and Peeled	Cut and not Peeled	Total	Per Man Day
701	2616	97	2715	3.9

Note:- Three trees under cooperative agreement.
Average size 11.6" DBH and 22' length treated.

Cooperation

Considerable public interest in controlling the Black Hills beetle epidemic in the western yellow pine timber is manifest in the local people. Last fall numerous demands for examinations of timber on private property were handled by the local force and in most cases where the infested timber was found, action was taken by the owner to treat the trees. It is estimated that 150 infested trees were fully treated by private owners. Others will care for their trees this spring.

This feature of our insectcontrol work is considered of utmost importance and the local force is continually pushing it. The practice is to get in touch with owners of western yellow pine timberland on which infested timber is found, and urge the treating of the infested trees before next June. We are meeting with success in the majority of cases.

It is necessary to treat some private timberland where it is impossible to get action from the owners. Most of such work to date has been on land where the owners are worse than penniless and are unable to do the work themselves or put up money to have the work done. Where owners are financially able we have had almost immediate response to our requests.

Experiment

At the request of Dr. F. C. Craighead of the Bureau of Entomology, 97 infested trees were felled and tops trimmed, but no peeling done. These trees will be examined this spring to determine the condition of the beetles. This study is to determine what effect merely felling the infested trees in the fall will have on the brood development. Will there be sufficient souring under the bark to completely kill the brood? Will the freezing of the wet bark do the work or will there be live beetles on only parts of the trunk? These questions and others may possibly be answered in examining the 97 trees not peeled.

These trees are in two different localities--75 on the Big Thompson above Waltonia and 22 in the upper end of Big Elk Park.

Meals

Last fall one outfit was furnished Government subsistence and one man was boarded at an eating place. The others were paid $1 per day more as a standard allowance where the men furnished their own board. The most satisfactory method is to allow the men $1 in lieu of subsistence.

Government mess was furnished to four men for a total of 888 man meals at a total cost of $250.69. No cook was hired and the men did their own cooking. This held down the cost somewhat and the man meals cost on the average of 28.2 cents each.

Conclusions

Areas covered last spring were found to be practically free from new infestation. The spring control work is considered as highly successful.

After having a try at both spring and fall work, I find that spring work is by far the most desirable and should always be the cheaper. One of the main factors in favor of spring work is that spotting is 100% easier than in the fall when the foliage has not changed color. This would also tend to increase the number of missed trees on the fall controlled areas.

The comparison of the costs of the two projects on a tree basis is very interesting and discloses that the supervision and spotting items cost 35 cents more in the fall than in the spring. Equipment costs were higher in the spring as this item bore the full depreciation of the tools and the Ford truck purchased at that time.

Fall supervision and spotting costs were just double those of the spring work as the spotters could not handle as many men as they could in the spring. Accessibility and spotting conditions are governing factors in determining these costs.

It is expected that next spring's control work may cost about the average of last year's work, or $1.65 per tree. This is based on the necessity of using small outfits on most of the areas to be covered.

FINANCIAL STATEMENT

Funds Available

Total Insect Fund (S&E FS 1928 FF)	$5,000.00
Total Contributed Salaries	667.00
Total	$5,667.00

Expenditures

Fall Examination

Contributed Salary	$48.50	
Travel	7.37	
Total		$ 55.87

General Supervision

Contributed Salary	$333.50	
Travel Expense	40.00	
Gas, Oil & Maintenance Govt. Truck	44.78	
Total		$ 418.28

Crew Supervision and Spotting

Contributed Salary	$285.00	
Travel & subsistence	206.50	
Wages Temporary Employees	753.00	
Subsistence-- Govt. Mess	61.50	
" Other "	124.00	
Total		$1,430.00

Labor

Total wages paid	$2,272.38

Subsistence

Government Mess	$189.19	
Other "	420.75	
Total		609.94

Supplies and Equipment

Sharpening tools	$ 12.00	
Tags	7.84	
Files, handles, etc	38.55	
Total		$ 58.39

Transportation

Laborers - Auto hire	$ 20.30	
" Horse hire (Pack outfit)	23.00	
Horse feed (Pack outfit)	14.31	
Total		$ 57.61

Miscellaneous

None

Total Expenditures	$4,902.47	
Balance on hand January 1, 1928 (Insect Fund)		$ 764.53

* Subsistence -Other- is the $1 per day paid in lieu of furnishing Government subsistence.

Cooperative Work Fund

Deposits

Lucas Brandt	$ 8.00	
Waddell	8.00	
Balance on hand -Dr.Maitland	82.20	
Total		$ 98.20

Expenditures

Lucas Brandt (3 trees treated)	$ 2.00
Balance on hand	$ 96.20

The balance of $6 in the Lucas Brandt deposit has been spent and this amount should be transferred to the Insect Fund as the $6 was paid from that fund. The balance of the cooperative work fund will be used this spring for control work on the cooperator's property.

SUMMARY OF FINANCES

Allotments

Government Funds (September, 1927)	$5,667.00	
Cooperative Work Fund (Oct. 15,1927)	98.20	
Total amount available		$ 5,765.20

Expenditures

Government Funds, January 1,1928	$4,902.47	
Cooperative Work Fund " "	2.00	
Total expenditures		$ 4,904.47

Balance on hand January 1, 1928 $ 860.73

Distribution of Costs on Tree Basis

Includes Government and Cooperative Work Funds. The $2 Cooperative Work Fund is charged to Subsistence, labor. Total trees treated was 2713 at a total cost of $4,904.47

Item		Cost per Tree
1. Examination	($55.87)	$0.021
2. General Supervision	(418.28)	0.154
3. Crew Supervision and Spotting	($1,430.00)	0.527
4. Labor	($2,272.38)	0.837
5. Subsistence	($611.94)	0.226
6. Supplies & Equipment	($58.39)	0.022
7. Transportation	($57.61)	0.021
Total Cost per Tree		$1.808

Total expenditure	$4,904.47
Total trees treated	2,713
Average cost per tree treated	$ 1.808

Comparative Summary of Costs for the Spring and Fall Projects, 1927

The spring work treated 8632 trees with an average 11" DBH and 22' length treated. The items are, therefore, spread over a greater number of trees. ~~Fall examination charge is in reality covering a cost part of which is chargeable to 1928 spring work.~~

The fall project treated 2713 trees with an average of 11.6" DBH and 22' length treated.

COST PER TREE

Item	Spring	Fall
Examination	$ .018	$ .021
General Supervision	.073	.154
Crew Supervision & Spotting	.259	.527
Labor	.746	.837
Subsistence	.268	.226
Supplies & Equipment	.100	.022
Transportation	.036	.021
Miscellaneous	.008	--
Total Cost per Tree	$1.508	$1.808

Total Cost Calendar Year 1927	$17,917.15
Total Trees Treated	11,345
Average cost per tree	$ 1.58

Spring Work 1928

The control work will commence as early as weather conditions will permit. This probably will be shortly after the middle of April. As far as can be planned now the organization will be lined up as follows:

Boulder District

Pack outfit of three or four men to cover the main western yellow pine timber on this district. Six weeks time.

Central Gulch. Bad infestation in this gulch will be covered in early April by local men working out of Lyons, Colorado. Three weeks time.

Estes Park District

North St Vrain area will be covered by spotter with five or six men. Four weeks time.

Big Elk Park area will require a spotter with nine to twelve men and a cook. Six weeks time.

Miller Fork Area. One crew of three or four men. Four weeks time.

Bear Gulch and Fish Creek. Pack outfit of three men. Three weeks time.

Poudre District

Stove Prairie and Poverty Flat. Pack outfit working Bear Gulch, probably five men and a spotter. Five weeks time.

Bennett Creek and upper Buckhorn area. Spotter and six men. Eight weeks time.

Poudre River areas. Spotter and three men, or Bennett Creek crew care for this area. Two weeks time.

Livermore District

Pick up of scattered trees in Cherokee Park area. Three men for two weeks.

The above outline will give an idea of the widespread organization needed to cover known areas of the infestation. It is estimated that the man days including spotting will be about 1500 to clean the above areas.

At the close of this spring's work, it is believed that the Black Hills beetle epidemic will be brought to a close on the Colorado.

Funds Available for 1928 Spring Work

Balance in Fall Insect Allotment	$ 764.53	
Allotted for Spring Work	6,150.00	
Total Insect Allotment		$6,914.53
Cooperative Work Fund		$ 96.20
Total All Funds available		$7,010.73

At the present this appears to be sufficient to take care of the known infested areas.

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Insect Control, Colorado
Fall Project, 1927

Map Accompanying Report

Legend

Areas treated - Fall 1927
1. Jug Gulch
2. Big Thompson & Glen Haven
3. Buckhorn
4. Allenspark
5. Jamestown
6. Big Elk Park

General Type Line

Area where control work is planned for spring work, 1928.

Jan 19, 1928
A.L.NELSON

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Insect Control Colorado

U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
W. B. GREELEY, FORESTER

COLORADO NATIONAL FOREST COLORADO

SIXTH PRINCIPAL MERIDIAN

1924

Scale

1 ½ 0 1 2 3 4 5 Miles

LEGEND

National Forest Boundary
Adjacent National Forest Boundary
Road, fair or good
Road, minor or very poor
Trail
Railroad
Supervisor's headquarters
Ranger station
Triangulation station
House, cabin, or other building

Polyconic projection
North American datum

Longitude west from Greenwich

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